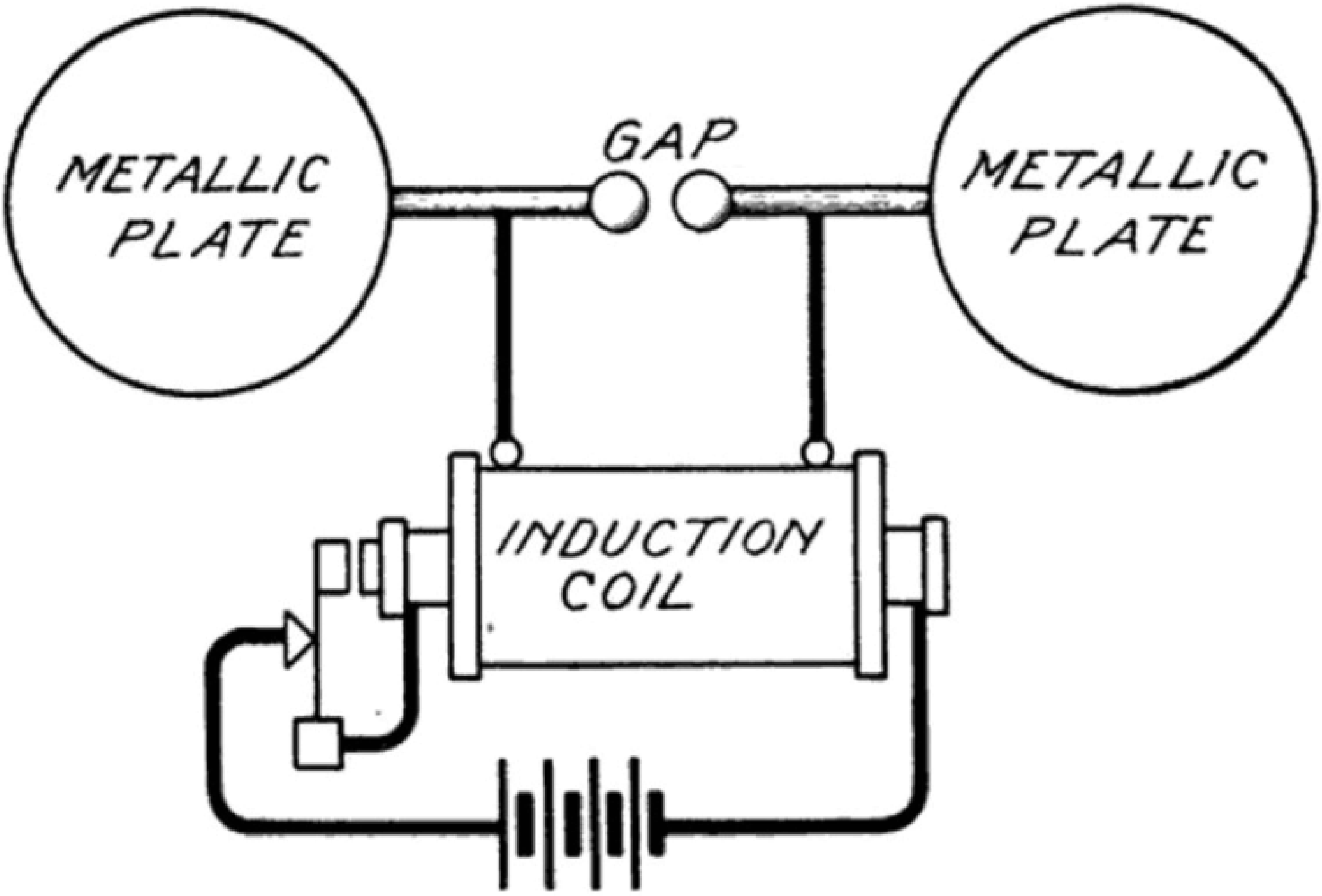
File:Hertz spark radio transmitter 1887.png



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Summary

Description	**English:** The first radio transmitter, the spark oscillator invented by Heinrich Hertz in 1886, with which he demonstrated the existence of radio waves. It consisted of a dipole antennamade of two horizontal wires with metal plates for capacitance on the ends, with a spark gapbetween the inner ends, with the two sides connected to an induction coil. The induction coil applied pulses of high voltage to it. The coil charged the two sides of the antenna with opposite charges. When the antenna discharged through a spark across the spark gap, it caused standing waves of voltage in the antenna, which radiated the energy as radio waves. The frequency of the waves was determined by the length of the antenna, which functioned as a half-wave dipole. The short antennas used by Hertz generated high frequencies of 50 to 450 MHz. Using his oscillator, Marconi demonstrated standing waves, refraction, diffraction, and polarization of radio waves, establishing that both radio waves and light were electromagnetic waves that had been predicted by James Clerk Maxwell in 1864.
Date	1912
Source	Retrieved 2 February 2015 from Charles Grinnell Ashley, Charles Brian Hayward (1912) *Wireless Telegraphy and Wireless Telephony: An understandable presentation of the*

	science of wireless transmission of intelligence, American School of Correspondence, Chicago, IL, p. 14, fig. 4 on Google Books
Author	Charles Grinnell Ashley and Charles Brian Hayward